Division's Air Quality Exhibit 5

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TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

October 15, 2009

TO: Internal File

THRU: Daron Haddock, Permit Supervisor

FROM: Priscilla Burton, CPSSc, Environmental Scientist III, Team Lead PWB by SRS

SUBJECT: Permit Application – Coal Hollow Mine, Alton Coal Development, LLC, Kane County, C/025/005, Task ID #3371,

SUMMARY:

On June 16, 2009, August 27, 2009, October 9, 2009 and October 14, 3009 the Division received responses to the deficiencies outlined in Coal Hollow review Task 3100, dated March 26, 2009.

The application was determined to be administratively complete on March 14, 2008 (2008/Outgoing/0001.pdf). Alton Coal Development, LLC provided public notice for the proposed mine on March 26 through April 16, 2008 in the Southern Utah News. The Division notified local, state, and federal governing agencies on March 19, 2008 (Outgoing/0002.pdf). The State Planning Coordinator, Mike Mower, was included in the distribution list. On March 31, 2008, the Southern Utah Wilderness Alliance (SUWA) was sent an electronic version of the agency notification letter.

The Division received many comments in response to the public notice (see 2008/Incoming) and several requests were made for an informal conference. That conference was held June 16, 2008 in Alton, Utah. The Informal Conference written comment period ended on June 20, 2008. Twelve written comments were received, including a petition requesting further studies of natural and cultural resources in the adjacent area. The petition provides contact information for 37 signatories. This petition was not considered classified by Division management as an Unsuitability Petition, per R645-103-420.

The information provided by the Applicant has met the requirements for public notification. Written findings from the Informal Conference were made on July 18, 2008 (2008\Outgoing\0024.pdf). The Findings required that the Division or County provide for another public hearing on the relocation of the County road to determine whether the public

health and safety will be protected. The Division placed a notice in the Southern Utah Sun on March 25, 2009 providing notice of an opportunity for such a public hearing. The closure of K3993 was mentoned in this notice.

By law, the Division has one year to review the application and write the findings in support of permit issuance or in explanation of permit denial. However, the Applicant had an audience with the Governor on September 17, 2009, with the result that the permitting process will end on October 15, 2009. As of October 15, 2009, the Division has accrued a total of 271 days technical and administrative review time. The Division will make its permit findings on October 15, 2009, in nine months time, which is 90 days ahead of that required by law.

TECHNICAL ANALYSIS:

GENERAL CONTENTS

IDENTIFICATION OF INTERESTS

Regulatory Reference: 30 CFR 773.22; 30 CFR 778.13; R645-301-112

Analysis:

In Chapter 1, Section 112, the applicant has met the requirements to provide ownership and control information for the operation and surface lands affected. The applicant and operator is Alton Coal Development, LLC, a limited liability company. The company is registered with the Utah Department of Commerce (Confidential Binder, Appendix 1-1). The corporate office is in Cedar City. The telephone and address is provided. The list of company officers' names and addresses and percent ownership, and the employer identification number have been provided in Section 112.310 and Section 112.320. The last four digits of the federal identification numbers were provided in the confidential file for the original owners, but were not provided for the two new members who together own 25% of the company. The beginning and ending dates for the two new and two leaving members were provided on October 13, 2009. One new member was listed with a retroactive begin date of 9/9/2004.

Chris McCourt is the resident agent and manager. Robert C. Nead, Jr., has been designated as the person responsible for paying the abandoned mine land reclamation fee (Section 112.230).

Surface and coal ownership are displayed on Dwg. 1-3 and 1-4, respectively and described in Section 112.500. The permit area surface is owned by two parties: C. Burton Pugh and the Allecia Swapp Dame Trust, administered by Richard Dame, Trustee. (Contact information for the surface owners have been provided.) Surface lands have been leased to the applicant. The lease assignments are included in the Confidential binder, Appendix 1-2.

Section 112.500 also provides the name and addresses of the owners of the coal to be mined. All 435 acres of coal to be mined is privately held, and has been leased by Alton Coal. The leases are provided in the Confidential binder, Appendix 1-2. There are 200 acres of coal owned by the Bureau of Land Management (BLM) in the north portion of the permit area shown on Dwg. 1-4, but this coal will not be mined.

Adjacent surface and subsurface ownership is displayed on Dwg. 1-3 and 1-4. As stated in Section 112.600, the BLM and Darlynn and Arlene Sorensen own land contiguous to the permit area. James Lloyd and Julie Johnson Brinkerhoff own land that is downstream, but not contiguous to the permit area.

Interest in adjacent federal coal is outlined in Section 112.800. The applicant has filed a lease by application with the BLM. At this time, the BLM is writing an Environmental Impact Statement. The BLM has determined the size of the Alton Coal Tract LBA to be approximately 3,600 acres (BLM Open House, Salt Lake City, February 2007).

The MSHA number for the mine site is 42-02519 (Section 112.700). MSHA numbers for structures are pending.

Findings:

The information provided meets the minimum requirements of the Regulations for Identification of Interests.

VIOLATION INFORMATION

Regulatory Reference: 30 CFR 773.15(b); 30 CFR 773.23; 30 CFR 778.14; R645-300-132; R645-301-113

Analysis:

Section 113 of the application states that there are no violations, suspensions, revocations, or forfeitures on record for Alton Coal Resources, LLC., or its officers or affiliates. New officers are not currently listed in the AVS database. An Applicant Violator System check indicated that the company has not operated previously in the United States but that two of the officers (Need and Barker) have previously engaged in coal mining operations. No violations were retrieved from the system on October 14, 2009.

Findings:

The applicant has met the requirements of the Rules for Violation Information.

RIGHT OF ENTRY

Regulatory Reference: 30 CFR 778.15; R645-301-114

Analysis:

The applicant has right of entry to 794.74 acres in T. 39 S., R. 5 W. Salt Lake Meridian, Sections 19, 20, 29, and 30. The application states that right of entry was obtained through lease agreement with the surface and mineral lease owners (Section 114). These agreements are found in the Confidential Binder, Appendix 1-2. Fee coal beneath Pugh surface is held by several individuals: C. Burton Pugh.. 40.5% of the coal; Margaret Moyers, 22.5%, and Roger Pugh, 37% (according to p. 32 of the Roger Pugh lease document). (Roger Pugh inherited the coal ownership from Verna Pugh who is deceased (personal communication from Chris McCourt on February 18, 2009).

Specific surface lands are described in the C. Burton Pugh lease document, which encompasses 732.78 acres (App. 1-2,Ex. 1), which includes land east of the permit area. Interest in the subsurface east of the permit area was declared in Section 112. 800. The Moyers and R. Pugh lease documents encompasses 372.68 subsurface acres of coal within the permit area, as shown by Dwg 1-4.

Exhibit 2 of Appendix 1-2 is the Dame Trust lease, which was signed by the Trustee, Richard Dame, on April 29, 2005. Specific lands are described in the Dame lease document, encompassing 61.96 acres.

Findings:

The information provided meets the requirements of the Regulations for Right of Entry.

LEGAL DESCRIPTION AND STATUS OF UNSUITABILITY CLAIMS

Regulatory Reference: 30 CFR 778.16; 30 CFR 779.12(a); 30 CFR 779.24(a)(b)(c); R645-300-121.120; R645-301-112.800; R645-300-141; R645-301-115.

Analysis:

The application provides a legal description for the 635.64 acre permit area on pages 1-4 and 1-5. The permit area legal description matches the permit area shown on Dwg. 1-1. The land within the permit area is all privately owned surface.

Two public roads run through the permit area: the Sink Valley Road (K3990 and the Robinson Creek Road (K3993). Both roads are claimed by Kane County under RS2477. The mining plan requires temporary closure of K3993 and temporary relocation of K3990 for the life of mine. As required by UAC Section 40-10-24-(4)(c), and R645-103-234, a public hearing for

the temporary relocation of K39990 was held on June 16, 2008 and a written finding was made on July 18, 2008 (2008\Outgoing\0024.pdf). The Division made three findings with regard to K3990:

1. There was not sufficient information available to ensure that the interests of the public and the landowners affected would be protected.
2. The BLM environmental analysis and Record of Decision concerning the temporary right of way for relocation of the County road onto federal land would be forthcoming and available to the Division. And, the Kane County construction and maintenance agreement with the Applicant will be made available to the Division. [The BLM EA and Kane County Agreements have been included in Chap. 1, App. 1-7.]
3. When the additional information is available, the Division would provide an opportunity for further public hearing and then make a further finding.

In accordance with the above findings, a notice was placed in the Southern Utah News on March 25, 2009 concerning the availability of information on the temporary closure and relocation of K3990 (App. 1-7) and describing the temporary closure of K3993 (Appendix 1-8) The public notice should outline the opportunity for public hearing, if requested (2009/Outgoing/0012.pdf).

The Swapp ranch house is not within 300 ft. of the permit area, as illustrated on Dwg. 1-5 which is drawn on a scale of 1 inch = 100 ft. The Dame lease (included in Exhibit 2 of Appendix 1-2 confidential volume) provides right of entry to land adjacent to the Swapp Ranch, but does not allow mining closer than 300 ft. to the dwelling.

Federal lands within T.39 S., R. 5 W., Salt Lake Meridian, were included in the petition for unsuitability in 1980 (Exhibit 2, Appendix 1-3). On December 16, 1980, Cecil Andrus, Secretary of Interior, designated lands to the northeast, east and southeast of the proposed permit area (in Ranges 2, 3, and 4 West) as unsuitable for underground and/or surface methods, in accordance with Section 522(a)(3)(B) of the Surface Mining Control and Reclamation Act (SMCRA). The "unsuitable" designation was made to protect fragile natural systems and to preserve the scenic beauty of at Bryce Canyon National Park and the park visitors' experience (Appendix 1-3, Exhibit 1).

The Secretary specified in items 5 and 6 of the unsuitability determination that any future specific mining plan or permit application for surface mining of the other federal lands in the Alton Coal field should be reviewed for visibility, vibration, and noise issues by the Department of Interior (through the National Park Service and the Office of Surface Mining) to determine whether specific conditions or stipulations should be placed on the permit. The Secretary stressed that the unsuitability designation was not "the only basis for protection of the values for which Bryce Canyon National Park was established," and directed the Department of Interior to take Park values into account in future decisions on undesignated federal lands near the park.

These issues are being reviewed by the BLM in the Draft Alton Coal Tract LBA Environmental Impact Statement (EIS).

UAC Section 40-10-24(1)(a) restates SMCRA Section 522(a)(4) and 522(a)(5) which requires that on non-federal lands, the board and the division have an obligation to establish a planning process enabling objective decisions based upon competent and scientifically sound data and information as to which, if any, lands in the State are unsuitable for mining. Such determinations should be integrated with the land use planning processes at the local and state and federal levels. UAC Section 40-10-24(1)(c) describes the unsuitability criteria that must be balanced against the economic impact in a cost-benefit analysis. They include incompatibility with current land use plans; the affect on fragile or historic and cultural lands; the affect on aesthetic values and natural systems; the affect on renewable resource lands, in particular the water supply and aquifer recharge; and areas subject to flooding or unstable geology. On May 13, 2009, the Kane County Planning and Zoning Commission approved two conditional use permits for mining within an agricultural zone (App. 1-9). To date there have been no petitions for unsuitability and no determinations of unsuitability made for this (fee) coal mining proposal.

UAC Section 40-10-24(4) places prohibitions on mining in National Parks, designated Wild and Scenic Rivers, National Recreation Areas etc. Pertinent to this proposal is UAC, Section 40-10-24(4)(b) which prohibits adverse effects on historic sites unless approved jointly by the division and state or local agency with jurisdiction over the historic site. Many public comments received by the Division were concerned with affects of traffic, noise, dust, vibration on the designated Panguitch Historic District and the affects of truck traffic on safety on SR 89 and the tourist economy in Garfield County and Panguitch.

Lands to be disturbed by coal mining and reclamation are not "unsuitable" as defined by 40-10-24(4) of the Act. Coal mining and reclamation operations would not adversely affect any publicly owned park or any place included in the National Register of Historic Places (R645-103-326). Kane County Commissioner Habbeshaw commented that the Utah Heritage Act supports coal trucking on Hwy 89 (0063.pdf).

Public Lands Policy Coordinating Office (PLPCO) and State Historic Preservation Office (SHPO) were notified of the administrative completeness on March 19, 2008. PLPCO did not provide comment. SHPO provided concurrence (7/14/08) on the Cultural Resource Management Plan (CRMP) and data recovery plan for seven archaeological sites that will be adversely affected. Phase 2 of the CRMP pertains to Panguitch and the pending federal lease action. The CRMP is in Confidential App. 4-1.

There will be an opportunity for public comment on socio-economic issues when the Bureau of Land Management DRAFT Environmental Impact Statement goes out for public review.

Commenters may file an unsuitability claim under R645-103-237, for the proposed permit and the adjacent federal lease by application area. However, under R645-103-431.600, the Division may decide not to process the part of the pertaining to lands to which an administratively complete permit application has already been received. A petitioner must meet an "injury in fact" test as described by R645-103-421 and provide a description of the impact of the designation (R645-103-422.300 and R645-103-422.800). Petitioners should also keep in mind the criteria for designating land as unsuitable (R645-103-320).

Findings:

The Applicant has met all the suitability requirements.

PERMIT TERM

Regulatory References: 30 CFR 778.17; R645-301-116.

Analysis:

The permit term of five years will allow for the three year mining plan and reclamation of the last 1000 ft. of highwall within a single permit term. The applicant has not requested a longer term. Section 116 of the application describes the acreage to be mined during each of the three years of mining activity. The disturbance sequence is shown on Dwg. 5-2. A total of 433 acres will be mined.

Findings:

The information provided meets the requirements for a five-year mining permit.

PUBLIC NOTICE AND COMMENT

Regulatory References: 30 CFR 778.21; 30 CFR 773.13; R645-300-120; R645-301-117.200.

Analysis:

A draft of the public notice was provided with the application in Appendix 1-5. A revised version of this notice appeared in the Southern Utah News from March 26 through April 16, 2008. A copy of the public notice, as it appeared, was sent to the Division by email on April 2, 2008 and was made part of the public record (2008/Incoming/0009.pdf). The notice indicated

that the public comment period would run for 30 days after the last notice. i.e. until May 16, 2008. Within this timeframe, supportive comments were received from the Kane County Commission, Representative Mike Noel, Alton Mayor Claren Heaton, the Utah Mining Association and from 6 regional residents (from Kanab, St. George, Cedar City, and other unspecified locations). Supportive comments focused on the need for jobs and industry in the region and the need to provide for energy independence.

Also within this time frame, negative comments were received from 7 out of state residents (Alaska, Pennsylvania, Ohio, Nevada and unspecified locations); 8 regional residents (Kanab, St. George, Santa Clara, and other unspecified locations) and one housing subdivision corporation east of Bryce Canyon National Park and the organization Save Our Air & Resources (Richfield Utah); one Hatch resident; and 16 Panguitch business and homeowners whose main concerns were the affects to the tourist industry by the transportation of coal (300 trucks daily) in the SR 89 corridor (recently designated the "Mormon Pioneer Heritage Highway") and through the Panguitch National Historic District; the affects of coal truck traffic on safety; the affect of particulates on visibility and the affect of lighting on the night sky; the displacement of wildlife; the affects to water resources from selenium and mercury; and the affects of a haul route through Alton. Three of these petitioners requested an informal conference based upon these issues.

The Division's agency notification letter (2008/Outgoing/0002.pdf) indicated the comment period would end on May 22, 2008 (not realizing how quickly the public notice would be published). Consequently, several more comments were received by May 22, including comments from the Southern Utah Wilderness Alliance, 13 southwestern region residents (Kanab, Cedar City, and unspecified), 4 Panguitch residents, 2 Hatch residents, and 2 Alton residents, all of whom were not in favor of the proposal. Three of these commenters requested an informal conference. In addition, the SUWA requested "Consulting Party Status" for cultural resource management.

Also received by May 22 was a supportive comment from one individual from the Southwestern region of Utah whose location was unidentified. In all 43 comments were received on or before May 22, 2008.

The Division has provided public notice in the Garfield County News and the Southern Utah News two weeks prior to the informal conference which was held on June 16, 2008 in Alton. (In addition, each commenter was notified individually of the conference.) Written findings from the Informal Conference were made on July 18, 2008 (2008\Outgoing\0024.pdf). A notice of temporary road closure was published in the Southern Utah News March 25, 2009 in accordance with R645-1-3-234, Suitability and the requirements of the July 18, 2008 Informal Conference Findings.

The Division has received comments with regard to this specific Coal Hollow application, for development of fee coal, from the following agencies:

- Powell Ranger District of the Dixie National Forest (2008/Incoming/0048.pdf)

The USFS Service expressed the same concerns as the community: that the area is of importance for tourism, that the traffic on SR 89 is made up of large recreational vehicles traveling to Bryce Canyon N.P., Zion N. P., and the Grand Canyon N.P; that the Class I air shed should not be degraded, since the night sky quality was part of the visitor experience and tourism makes up 60% of the economy.

- Office of Surface Mining (2006/Incoming/0008.pdf) stated that no federal mine plan approval was required.
- State Historic Preservation Office (2007/Incoming/0022.pdf)

The Division has been coordinating the UAC 9-9-404 review of this project with SHPO and has contracted with PLPCO for an archaeological review of the PAP.

The Governor's Resource Development Coordinating Council also had a public/agency comment period. The RDCC did not provide any comments to the Division.

Findings:

The information provided by the Applicant meets the requirements for public notice.

FILING FEE

Regulatory Reference: 30 CFR 777.17; R645-301-118.

Analysis:

This $5.00 fee was paid with the application.

Findings:

The Applicant has met the requirements of the filing fee.

PERMIT APPLICATION FORMAT AND CONTENTS

Regulatory Reference: 30 CFR 777.11; R645-301-120.

Analysis:

Appendix 1-6 contains a statement of the mine permit application's veracity and accuracy from Chris McCourt, the manager and resident agent for Alton Coal Development, LLC. The information provided is in a format prescribed by the Division.

Findings:

The information is either provided in a format prescribed by the Division and meets the requirements of R645-301-121.300 or elsewhere in this technical analysis, the Division makes requests for further information or requests clarification.

REPORTING OF TECHNICAL DATA

Regulatory Reference: 30 CFR 777.13; R645-301-130.

Analysis:

Analytical data is accompanied by the names of the individuals or firms responsible for collection and/or analysis of the data. A list of individuals and consulting firms contributing to the Mining and Reclamation Plan is found in Section 130.

Findings:

The information provided meets the requirements of the Utah Coal Rules.

COMPLETENESS

Regulatory Reference: 30 CFR 777.15; R645-301-150.

Analysis:

The first application was received on June 27, 2006 and was determined incomplete on August 22, 2006. The second application was received on June 14, 2007 and was determined incomplete on August 27, 2007. Supplemental information to the June 14, 2007 application was received on January 24, 2008. The Applicant was notified that the application package (combined information received June 14, 2007 and on January 24, 2008) was considered complete on March 14, 2008 (2008/Outgoing/ 0001.pdf and 0001a.pdf).

Findings:

The Applicant has met the completeness requirements.

ENVIRONMENTAL RESOURCE INFORMATION

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR 783., et. al.

GENERAL

Regulatory Reference: 30 CFR 783.12; R645-301-411, -301-521, -301-721.

Analysis:

Approximately 7,000 ft. elevation, gently sloping land vegetated with Utah juniper, pinyon pine, big sagebrush and wet meadows. Lower Robinson Creek (runs east west on the north of permit area). Sink Valley Wash (runs north south on the east of the permit area). There area several springs and agricultural ponds on eastern boundary of the proposed permit area. The average annual precipitation is 16.43 inches, evenly distributed throughout the year. The current and post mining land use is undeveloped rangeland (wildlife) and livestock pasture (grazing).

Findings:

The information provided meets the requirements of the Rules for general resource information.

SOILS RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.21; 30 CFR 817.22; 30 CFR 817.200(c); 30 CFR 823; R645-301-220; R645-301-411.

Analysis:

The application includes a non-prime farmland determination by the NRCS in Appendix 2-1, Section 1). The Order II soil survey in Appendix 2-1 includes field description of soil pits, laboratory analysis of samples taken by horizon, and a soil map (Dwg 2-1). The soil survey classifies the soil into thirteen family map units. These map units are described in the text (Section 222.200) and representative pedons are provided for each unit. Sections Two and Three of Appendix 2-1 provide greater detail on the classification and naming of the soils and the typifying pedons for the soils. Productivity estimates are provided in Section 321.200. Topsoil and subsoil will be salvaged for use in reclamation, no substitute or borrow soils will be needed.

Findings:

The information provided meets the requirements for baseline soil survey information as required by the R645 Coal Rules.

ALLUVIAL VALLEY FLOORS

Regulatory Reference: 30 CFR 785.19; 30 CFR 822; R645-302-320.

Analysis:

Alluvial Valley Floor Determination

The 2008 Coal Hollow mine plan is also under review for alluvial valley floor character by a third party. There has been no final AVF determination made at this time.

Background Information

The Alton/Sink Valley area was the subject of a much larger, mine permit application in 1982 and 1987 by Utah International Inc. (UII, P/025/003). The UII application included the Sink Valley area in T 39 S, R. 5 W. and surrounding federal leases in T. 39 S., R. 6 W.; T. 40 S., R. 4 W.; T. 40 S., R. 4 ½ W; T. 40 S., R. 5 W; and T. 40 S., R. 6 W. The federal leasing required an Environmental Impact Statement (Development of Coal Resources in Southern Utah, 1979). The Office of Surface Mining (OSM) commissioned a reconnaissance report of the alluvial valley characteristics of the Alton Area in 1980. The resulting report, by Jack Schmidt was titled, "Reconnaissance Determination of Alluvial Valley Floor Status and Assessment of Selected Geomorphic Parameters in selected Stream Valleys of the Alton Petition Area and Adjoining Lands, Garfield and Kane Counties, Utah." The Schmidt report details agricultural production, water rights and water diversions in the Alton amphitheater and Johnson Canyon at the time. The report describes a very active agricultural community in Sink Valley and adjacent areas. (Jack Schmidt's full 1980 report can be found at 025/0005/2006/Incoming/0012.pdf.)

In 1983, OSM mapped the Sink Valley alluvial valley floor (AVF) and stressed the importance of agricultural land use in making the Sink Valley AVF determination, in the absence of more typical geology associated with an alluvial valley (OSM 1983 [draft] Alluvial Valley Floor Identification and Study Guidelines, Appendix D, pg. D-2 and D-6). OSM stated that the initial reconnaissance conducted of the Alton area by Jack Schmidt in 1980 was sufficient to confirm the existence of an alluvial valley floor based upon the importance of the valley land to agriculture (pg. D-4), but suggested that an Applicant for a mine permit might collect additional data to clarify the regional hydrologic pattern (page D-2).

OSM was required to make specific detailed findings with regard to the protection of the hydrologic balance and reclamation during the processing of the Alton mine permit application (which included tracts of federal leases) in response to petition and litigation in United States District Court for the District of Utah, Central Division (0250003/1987/Incoming/0040.pdf). The Court's Memorandum of Decision and Order was dated February 12, 1985.

The February 8, 1988 Initial Completeness Review for the 1987 UII Alton Mine application indicates on page 34 that the following areas were identified as probable alluvial valley floors (filed as 0025/0003/1988/Incoming/0023.pdf):

1. Upper Skutumpah Creek, Sec. 20 and 29, T40 S., R 4 1/2 W.
2. Skutumpah Creek, Sec. 30, T. 40 S., R. 4 ½ W.
3. Thompson Creek and Tributaries, Sec. 30 and 19, T. 40 S, R 4 ½ W and Sec. 24, 13, 12, T 40 S., R. 5 W.
4. Bald Knoll Hollow, Sec. 14, 15 and 16, T. 40 S. R. 5 W.

The Division further stated in the Initial Completeness Review on pages 35 that the following areas had been "positively" determined to be Alluvial Valley Floors:

1. Skutumpah Creek in Sec. 32, T.40.S., R.4 ½ W. and Sec. 5 and 6 in T.41 S., R. 4 ½ W.
2. Thompson Creek in Sec. 31, T.40 S., R.41/2 W. and Section 6 in T.41 S., R.4 1/2 W.
3. Upper Sink Valley Wash in Sec. 32, T. 39 S., R. 5 W. and Sections 5 and 8 in T. 40 S. R. 5 W.
4. Sink Valley in Sections 19, 20, 29, and 30, T. 39 S., R. 5 W.
5. Lower Swapp Hollow in Sec. 28, T. 39 S., R. 5 W.
6. Kanab Creek in Section 18, 24, 25, 26, and 36, T. 39 S., R. 5 W.
7. Alton Amphitheater in Sec. 6 and 7, T.39S., R.5W. and Sec. 1, 11, 12, and 13 in T.39S. R.6W.

The Coal Hollow proposed permit area encompasses the Sink Valley in Section 19, 20, 29 and 30 in T. 39 S., R. 5 W. The Division's 1988 decision was based upon borehole data showing sorted deposits of sand size or larger particles and previously published information, as laid out in a memo from Richard Smith, Geologist, to John Whitehead, Permit Supervisor, dated November 9, 1987 (025/0003/1987/Internal/0002.pdf).

The UII commissioned Water Engineering Technology, Inc. (WET) of Fort Collins, CO to evaluate the Sink Valley area. The1988 WET report, titled "Geomorphological and Sedimentological Characteristics of Sink Valley, Kane County, Utah" argued that the sediment in Sink Valley is comprised of coarse material in an alluvial fan laid down by unconfined sheet floods, debris flows and mud flows. The report claims there was never a continuous stream in Sink Valley. Thus, by R645-100 definition, a lack of a continuous stream channel meant an alluvial valley floor in Sink Valley could not exist.

The Division was not persuaded by the WET report. To the contrary, Richard Smith, Division Geologist, viewed the WET report as further evidence of unconsolidated stream-laid deposits holding streams and reported as much to the Division Associate Director, Ken May, on October 13, 1988. His memo cited near surface deposits of sand sized particles, selectively sorted, and deposited within and adjacent to stream channels, as well as the presence of smooth land surfaces and channels exceeding 3.0 ft. wide X 0.5 ft. deep within Sink Valley, and the established agricultural land use, for a positive determination of an alluvial valley floor in Sink Valley (0250003/1988/Internal/0001.pdf).

In December 1988, Nevada Electric Investment Company (NEICO, a partner in UII) petitioned the Board of Oil, Gas and Mining for review of the Division's AVF determination. There is no record of a Board Hearing on the matter.R645-302-321.210

Mapping of Unconsolidated Streamlaid Deposits Holding Streams

In Appendix 7-4, the application describes the origins of Sink Valley through the burial of Tropic Shale by Wasatch sediments brought down from adjacent canyons (Robinson, Dry Creek, Sec. 21 Canyon and Swapp Hollow) and the eventual lowering of Robinson Creek, which siphoned off a portion of the Sink Valley flow, creating a residual alluvial fan bordered by a Tropic Shale ridge. The shale ridge blocks subsurface flow of groundwater to the west, bringing the shallow groundwater system to the surface on the eastern boundary of the permit area as evidenced by numerous seeps and springs shown on Dwg. 7-1 (pp.7-3- 7-4 Sec. 721, Chap. 7). These seeps and springs either sub-irrigate the lands within, east and south of the permit area or they fill ponds for domestic, stockwatering, irrigation or wildlife uses (Table 1, App. 7-1 & App. 7-3). This area is generally represented by groundwater discharge area A on Dwg 7-4.

A second deeper, groundwater system is also within the permit boundary (Chap. 7, Section 721, 728 pg. 7-26). This deep water was tapped at artesian wells Y 102, Y-61, Y-59, and C5 (Fig. 13, App. 7-7). The deeper groundwater system is in communication with wells SS at the south end of the permit area, where data from SS wells provides evidence of a 15 foot thick, highly permeable strata located 60 to 75 feet below the surface (Chap 7, Sec. 727, pg. 7-27 and App. 7-1, Table 8). The application states that this coarse strata is in contact with the artesian groundwater system found on the eastern permit boundary in Section 29 and that groundwater recharge to the lower half of the Sink Valley sediments occurs via horizontal migration. Artesian wells were also noted to the south of the permit area in Section 32 (Chap 7, Sec. 721, pg. 7-5). This area is generally represented by groundwater discharge area B on Dwg 7-4.

The depth of the water bearing coarse strata in well SS (App. 7-1, Table 8) corresponds with the top of the coal elevation shown on Dwg 6-5 at the SS well location. Thus the coal seam which is 200 feet below the surface at the mouth of Swapp Hollow (App. 7-1, Table 5, Well 36) may be in contact with the artesian water in surrounding wells that are screened at depths 62 to

142 feet below the surface (App. 7-1, Table 5). Flow through the deep, coarse fragments provides better quality, water emanating from SP 32, south of the permit area (Chap. 7, Section 721, pg. 7-8). The same strata would likely be responsible for the flows into Sink Valley at SP4 and SP 27 at the contact with the Dakota formation (just below the coal seam).

The coal seam provides a small amount of flow (5 – 10 gpm) to Robinson Creek in the northwest end of the permit area (Chap 7, Sec. 721, pg. 7-6). While the coal seam is reported to have low transmissivity at Y-38 and Y-36 locations (Chap 7, Sec. 721, pg. 7-4), the SS-75 well had high transmissivity (Table 7-8). Clearly the groundwater contained in this coarse strata does not provide flow at SW 6 or SW 9 in the lower Sink Valley stream channel. These stream monitoring locations flow in response to snowmelt and precipitation events (Chap. 7, Table 4).

R645-302-321.220 Mapping of Agricultural Lands

Grazing lands supported by numerous seeps and springs dominate the proposed permit area as shown in Chap 4, Ex. 4.1. Acreage used for pasture was not provided for Pugh or Dames lands, although one can estimate based upon the information in Section 321.100 described above that there is 261 acres of meadow and pasture. Production estimates for the meadow are 1 Ton/acre and the value of dairy hay at $130/Ton, the value for the crop produced by 69 subirrigated meadow acres within the permit area would be $8,970 annually. (Utah Department of Agriculture. February 27, 2009. http://ag.utah.gov/news/publications/reports.html). The unirrigated pasture land within the permit area has half the productivity would have a crop value of $12,980 annually. Crop land is illustrated on Ex. 4.1 east of the proposed permit area. Acreage under production is given as 90 acres. The value of this cropland owned by Sorenson is discussed in the section below.

Drawing 7-1 shows the total number of seeps and springs in the permit area available for grazing animals. Drawing 7-7 and Plate 5 show the ponds and ditches developed to support agriculture. Both Pugh and Dame own pastureland or subirrigated meadow lands within the permit area that have been leased to Alton Coal Development (Dwg. 3-1 and 7-7). These subirrigated lands are grazed to produce cattle, but are not cultivated to produce crops (Appendix 7-1, pg. 48). Pasture lands extend further south in Sink Valley, but these lands in Section 32 have not been mapped.

R645-302-321.230 Mapping of Current or Historic Flood Irrigated Lands

Within the permit area there is one spring with a domestic water right SP-7 (Pugh, water right 85-215), located right along the fence between Pugh's and Dame's properties (Dwg. 7-3). Adjacent to the permit area, there are two springs with a domestic water right t: SP-3 (Sorensen, water right 85-373), and SP-10B (Johnson, water right 85-1011).

Stockwatering is the use stated on most of the water right printouts in Appendix 7-3, but most spring and surface-diversion rights in the W/2 of Sec. 29, E/2 of Sec 30, and W/2 of Sec. 32, T. 39 S., R. 5 W., along Sink Valley Wash around and downstream of the Swapp Ranch, either cover both stockwatering and irrigation or are for irrigation only. Ponds are used for stockwatering and irrigation systems (App. 7-7, pg. 14).

The Pugh lands were formerly irrigated using ditches, ponds, and pipes to bring water from as far as upper Robinson Creek (discussion with C. Burton Pugh in September 2005). Today, pasture lands in the permit area, dominated by introduced grass species, rely on precipitation and stored soil moisture for growth (average approximately 16 in/yr) and not on irrigation or subirrigation (App. 7-7, pg. 12; App. 7-1, pg. 48). Dame retains water for flood irrigation by the active water rights on Pond 29-3 and 29-5 (Dwg 7-7). Much of the Dame property is subirrigated and apparently needs no supplemental irrigation.

Darlynn Sorensen currently produces hay on 154 acres at the mouth of Swapp Hollow (Appendix 7-1 page 48) Production from the Sorenson field varies by water year from 2,000 to 6,000 bales of hay (80 lbs each). This equates to 80 to 240 Tons of hay. At $130/Ton, the Sorensons annual crop value would be from $10,400 to $31,200. (Utah Department of Agriculture. February 27, 2009. http://ag.utah.gov/news/publications/reports.html). Dwg. 7-7 shows some flood irrigated fields owned by Sorenson. Irrigation typically was a single flood application in the spring, when adequate water was available (App. 7-7, pg. 13). During a site visit in the fall of 2008, the Division noted that the Sorenson's had increased the acreage of cultivated land in Swapp Hollow.

The Applicant has shown that the agricultural use of the land within the permit area has declined on Pugh and Dame lands and that Pugh's subirrigated meadows on the eastern side of the permit area are now supporting undeveloped grazing as Pugh's ponds and diversion structures are in disrepair.

Acreage of (Sorenson) irrigated lands east of the permit area was not provided and is variable depending on water resources. Probable alluvial valley floors along Kanab Creek and lower Sink valley were mapped (Plate 5, App. 7-7). The Kanab AVF is supported by the existence of irrigation structures, ponds and agricultural cattle production. The Lower Sink Valley Wash AVF was arbitrarily designated based upon the defined stream channel. The designation in lower Sink Valley is below the historic location of flood irrigated or subirrigated areas in Swapp Hollow and Sink Valley.

The information provided indicates that within the permit area, Pugh lands were formerly irrigated. Dame lands are actively flood irrigated or subirrigated. West of the permit area, Lamb lands are irrigated with water taken from Kanab Creek and lower Robinson Creek (Water Rights Appendix 73). East and adjacent to the permit area, Sorenson lands are subirrigated and irrigated. South of the permit area the Sorenson pasture lands in NW1/4 Sec 32, were evaluated

by the use of auger in August 2009 and were determined not to be subirrigated, but dependent on rainfall and pond seepage for irrigation.

R645-302-321.240 Documentation of SubIrrigation

The information provided indicates a substantial area of subirrigated meadow and potentially irrigated pastureland within east of the Tropic Shale Ridge (in the proposed permit area and eastward) and to the south of the permit area on Sorenson land. The area is outlined on Plate 7-7 received January 24, 2008. The subirrigated area was reduced in size after an auger evaluation conducted on August 15, 2009 (Plate 7-7 received 8/27/2009). The Division has compared the infrared imagery in Plates 3 and 4 and concludes that adequate soil moisture is present during the growing season to provide subirrigation for pasture in R. 5 W. T. 39 S. Sections 20 and 29. The growing season at this 6,900 ft. elevation averages 110 frost free days, with the last frost occurring on or about June 5 and the first frost occurring on or about September 24, according to Kevin Heaton, USU Extension Service (personal communication on 10/15/2009).

Landowners James Lloyd and Julie Johnson Brinkerhoff stated to the Division on September 24, 2009 that their pastures in Section 32 were subirrigated, see inspection report # 2151.

R645-301-321-250 Documentation Of Water Quality and Yield, Stream Flow, SoilCharacteristics, and Topography Affecting Flood Irrigation Potential

Pond 29-3 on Richard Dame's property is fed by groundwater from an alluvial spring. Surface water collects downstream in pond 29-5, also on the Dame property (pg. 14, Sec. 4.2, App. 7-7).

The Sorenson's flood irrigated croplands are outlined on Dwg 7-7. The Sorenson property is just east of the permit area (Dwg 1-3). App. 7-7 Sec. 4.1 relates that ponds 29-1 and 29-2, as well as the ponds 29-6, 29-4, 29-7, 29-8, 29-9 [that function as a series of overflow ponds down the Sink Valley drainage] and pond 32-1 are all on Sorenson property. Of the Sorenson's ponds, only pond 29-7 is equipped with an outlet control structure for irrigation.

A portion of the Pugh property is subirrigated, the rest was flood irrigated with a diversion from Water Canyon (Dwg 7-7). This diversion was not serviceable during a field visit in the fall 2008. Pond 20-1 is located on the Pugh property and it is equipped with an outlet control structure for irrigation (Sec. 4-2, App. 7-7). There was no water in the pond in the fall of 2008 and the supply pipe was disconnected.

The information provided indicates that the terrain is suitable for irrigation, but that irrigation is not required to produce meadowlands and pasture. When available, irrigation doubles yield. Water quality data indicate that there may be enough water to flood irrigate; that the quality of water from shallow alluvial groundwater is sufficient to raise alfalfa or other grasses for hay crops and pasture. Groundwater from the deeper portions of Sink Valley to the east in Section 32 are part of a larger, more continuous groundwater system" that is of better quality than the shallow groundwater (Pg. 7-8 Chapter 7.)

The volume of water to be encountered during mining is related in Chapter 7, Section 727, page 7-21. The Applicant states that the average discharge from all springs in Groundwater Area A (shown on Dwg 7-4) sums to 35 gpm. The average discharge from all springs in Groundwater Area B sums to 17 gpm. If mining causes material damage to all springs, 52 gpm replacement water would be required. The application states that there could be as much as 200gpm entering the open pit at the south end of the permit area in the vicinity of well SS (App. 7-7, pg. 35 and Chap 7, Table 8). (This is the same area where the applicant has requested a variance from the six month/1,500 linear feet backfilling requirement of R645-301-553.)

R645-302-321-260 Analysis of Aerial Photography Showing Seasonal Difference between Valley and Upland Vegetation.

A discussion of the infrared imagery taken in July 15, 2006 and November 15, 2007 is provided in Section 8.1 of the Peterson Report included as an Appendix to Chapter 7. The Division has compared the infrared imagery in Plates 3 and 4 and concludes that adequate soil moisture is present during the growing season to provide subirrigation for pasture in R. 5 W. T. 39 S. Sections 20 and 29. The growing season at this 6,900 ft. elevation averages 110 frost free days, with the last frost occurring on or about June 5 and the first frost occurring on or about September 24, according to Kevin Heaton, USU Extension Service (personal communication on 10/15/2009).

The information on groundwater depths is summarized in Figures 13 and 14 of App. 7-7. On the average, depth to groundwater in wells east and south of the permit area is 4.5 feet and within the permit area it is 9 feet (Fig. 13, App. 7-7). Immediately east of the permit area, artesian water rises an average of – 15 ft. (above ground). Minimal seasonal variation in wells within the permit area and in the artesian flow is presented in Fig. 14, App. 7-7.

Adjacent Area

Appendix 7-7 suggests the location of "probable" adjacent alluvial valley floor areas along Kanab Creek and lower Sink valley based upon visual observations and the location of irrigation diversions and pond structures. An assessment of water quality or quantity has not

been determined for the Kanab Creek probable AVF (in accordance with R645-302-322.100 and R645-302-322.200).

The Division is required to protect adjacent areas designated as alluvial valley floors, as per R645-302-320 and R645-302-322. Adjacent area is a defined term and means the area outside of the permit area where a resource or resources are or reasonably could be expected to be adversely impacted by the proposed coal mining and reclamation.

The December 18, 2008 application includes an outline of the adjacent area to show areas where hydrology regime may be affected by the mining. As drawn, the adjacent area includes Lower Robinson Creek, Sink Valley and the mouth of Swapp Hollow. As applied to the AVF determination, the adjacent area map shows areas where the hydrologic impact may affect the downstream probable alluvial valley floors shown on Plate 5, App. 7-7 (Kanab Creek and lower Sink Valley).

Agricultural production in a segment of the probable Kanab Creek alluvial valley floor was described in Section 8.0 of App. 7-7 as 200 acres of pasture or hay that yields approximately 1 Tons/acre. The value of supreme to premium dairy quality alfalfa hay would be on the order of $130/Ton, based upon the Utah Department of Agriculture's February 27, 2009 (http://ag.utah.gov/news/publications/reports.html). The total annual value of the Lamb hay crop would be approximately $26,000.00. This figure does not include the $13,000.00 value of the after-crop grazing (estimated on pg.33 of App. 7-7 to be ½ T/acre)

Plate 5 illustrates less than the first mile of the probable Lower Sink Valley alluvial valley floor. There is no agricultural use in the first three-quarter mile of the probable alluvial valley floor in Lower Sink Valley Wash as shown on Plate 5 and discussed in Section 8.0. The application does not discuss downstream agricultural activity of the Johnson-Brinkerhoff operation and the map does not extend for the length of the continuous stream channel in Lower Sink Valley. The Bald Knoll, Utah, USGS 7.5 minute topographic map shows the Lower Sink Valley stream channel continuing south five miles to the confluence with Kanab Creek. The Division photographed the confluence on September 24, 2009 and noted that the confluence was saturated, but there was no surface flow. Ephemeral tributaries to Sink Valley Wash occur approximately every mile along its path to the confluence with Kanab Creek.

Applicability of Statutory Exclusions

none

Findings:

In accordance with R645-302-321.300, the Division must make a finding of the extent of any alluvial valley floors within the study area (permit and adjacent area).

There is water available for irrigation west of the permit area and east of the permit area. Within the permit area, water subirrigates meadowlands east of the Tropic Shale Ridge.

Grazing lands supported by numerous seeps and springs dominate the proposed permit area as shown in Chap 4, Ex. 4.1. Crop land is illustrated on Ex. 4.1 east of the proposed permit area. There are 260 acres of meadowland and pastureland within the proposed 653 acre permit area (table on pg.3.3, Chap. 3 and Dwg. 3-1). Both Pugh and Dame own lands designated pastureland or subirrigated meadow lands within the permit area that have been leased to Alton Coal Development (Dwg. 3-1 and 7-7). Pugh and Dame lands have been out of production for at least ten years. Just east of the permit area, Sorenson has a productive agricultural operation producing hay valued at more than $30,000.00/yr. To the west, along Kanab Creek, there is another productive agricultural operation with annual production valued at closer to $4 million.

Irrigation diversions and ponds used to support agriculture within the proposed permit area, and still provide for agriculture on the perimeter. Three water rights exist for domestic use along the eastern permit boundary and one domestic water right is located on the southern permit boundary. Stockwatering is the use stated on most of the water right print-outs in Appendix 7-3, but many spring and surface-diversion rights in the W/2 of Sec. 29, E/2 of Sec 30, and W/2 of Sec. 32, T. 39 S., R. 5 W., along Sink Valley Wash around and downstream of the Swapp Ranch, either cover both stockwatering and irrigation or are for irrigation only. Water quality data indicate that there may be enough water to flood irrigate; that the quality of water is sufficient to raise alfalfa or other grasses for hay crops and pasture. There are four domestic water rights within or adjacent to the permit boundary.

The agricultural component of the alluvial valley floor determination is present. There is water available and sufficient to support agriculture and domestic use east of the Tropic Shale Ridge and South in Sink Valley Wash.

PRIME FARMLAND

Regulatory Reference: 30 CFR 785.16, 823; R645-301-221, -302-270.

Analysis:

The Natural Resources Conservation Service evaluated the soils of the proposed permit area for prime farmland status in the fall of 2006. The NRCS concluded that there were no prime farmland soils in the permit area, however soils on slopes less than 14 percent could qualify as Soils of Statewide Importance, if irrigated (Appendix 2-1, Tab 6 and M:0250005\2006\Incoming\0011.pdf).

Within the permit area, the topography has a gentle slope of 1 – 5% in Soil Map Unit 7 and 3 – 8% in Map Units 1 and 4 (Section 222.300 and Dwg 2-1). Drawing 7-7 identifies flood irrigated and subirrigated lands, ditches that have been used for irrigation, and ponds that retain water for irrigation systems. The Applicant states in App. 7-1, pg. 48, that there has been no irrigation during the past 10 years.

The reason given for the decline in agricultural activity is the lack of appreciable quantities of water (App 7-7, pg. 13). However, water monitoring conducted between 2005 and 2007 shows no appreciable difference from the 1987-88 data from the Utah International application. Although, the palmer hydrologic index (Figure 2, App. 7-1) does indicate that there were several years of drought in the past decade, that would have limited irrigation, the Division concludes that the decline in irrigation in the SW ¼ Sec 20 and the SE ¼ SE ¼ Sec 19 has less to do with water availability, and more to do with the landowner's inclination.

Use of the pastureland within the permit area has declined on Pugh lands. Pasturelands in the SW ¼ Sec 20 and the E ½ E ½ Sec 19 were formerly irrigated from water diverted from Water Canyon (miles upstream) and stored in a pond. During a site visit in October 2008 the Division noted that source waters from Water Canyon on USFS lands had left the stream channel and were lost in overland flow before reaching the collection point at RID-1. In addition, metal collection pipes at RID-1 carried a limited volume due to corrosion and cracking, and the pipes were disconnected along their length from the diversion to the holding pond 20-1. Despite a lack of irrigation, the Division noted 35 cattle grazing subirrigated Pugh lands on October 1, 2008.

Dame holds water rights from springs to irrigate 93 acres. Much of the Dame property is subirrigated and no supplemental irrigation system was noted during a site visit October 2, 2008. Table 2, App. 7-7 indicates depth to ground water in soil pits was between one and six feet on the eastern side of the permit area and between four and ten feet in the center of the permit area, allowing for sub-irrigation of Dame's meadows and pastures.

East of the permit area, the flows from Right Hand Wash, Swapp Canyon Creek, and Sink Valley Wash provide the Sorensons with the water rights to irrigate irrigation of approximately 143 acres in the W ½ of Sections 29 and 32 and stockwater for 300 units. (App. 7-3, Water Rights).

South of the permit area, Johnson has one surface water right on Sink Valley Wash for the irrigation of 9.0 acres and stockwater for 125 stock units.

Findings:

The Division, in consultation with the NRCS, finds that there are Soils of Statewide Importance, but no prime farmlands in the permit area.

OPERATION PLAN

AIR POLLUTION CONTROL PLAN

Regulatory Reference: 30 CFR 784.26, 817.95; R645-301-244, -301-420.

Analysis:

The Applicant is required to obtain an Air Quality Approval Order prior to receiving a permit to mine. The first step in acquiring an Air Quality Approval Order is to file a Notice of Intent with the Utah Division of Air Quality (DAQ).

One comment received indicated that the Applicant had not filed a Notice of Intent with the Utah Division of Air Quality (DAQ). However, the Permit Application Package indicates that Alton Coal Development, LLC provided the DAQ with a Notice of Intent (NOI) on May 8, 2007 (Section 422 and Appendix 4-2). On July 2, 2008, Maung Maung of the DAQ confirmed that the NOI had been received in May 10, 2007, and review is pending. The NOI provided to the DEQ/Division of Air Quality on May 8, 2007, listed 60 acres overburden stockpiles, and 3.35 acres coal stockpile, but did not describe the 17 acres topsoil, the 87 acre spoil pile and approximately 70 acre open pit working area. The NOI has been removed from the application.

Several comments were received during the public comment period and during the informal conference that the ambient and fugitive dust might degrade the characteristic clear skies of the area; that the fugitive dust might affect water quality of nearby streams and perhaps the groundwater; and that uncovered haul trucks might leave coal fines in their wake.

The application states in Section 521.168 (pg. 5-15) that there are "no specific air pollution collection or control facilities proposed." Public concerns are partially addressed by the Applicant's fugitive dust control plan, found in Appendix 4-5, required by R645-301-423. The plan will stabilize exposed surface areas using mulch and tackifier (R645-301-244.100); will minimize and control erosion of regraded areas (and topsoil and subsoil piles) and will control sediment contributions to streams from stockpiles (R645-301-244.320 and R645-301-526.220, *et seq*), using tackifier or surface roughening, mulch, and vegetation (R645-301-244.300);

The App. 4-5 fugitive dust control plan includes the following:

- Mulch or tackifier application for unseeded topsoil/subsoil stockpiles.
- Seeding of topsoil stockpiles in existence longer than one year.
- Tackifier on graded, unseeded reclamation areas.
- Water sprays (as needed) for material handling points (crushing, screening, transfer, loading, dumping); for excavation and pushing activities; for construction and demolition; for drilling and blasting;and for cleared areas.
- Water sprays or chemical treatment or gravel as needed on unpaved roads and yard areas.
- Synthetic cover on haul truck beds as needed.
- Coarse gravel at entrances to and exits from public roads.

The App. 4-5 fugitive dust control plan acknowledges that monitoring and evaluation are requirements of R645-301-423 et seq, for surface mines producing greater than 1,000,000 tons/year and will be enforced by the Division. The Coal Hollow mine projects a 2 million ton annual production rate. The fugitive dust control plan addresses the control of fugitive dust from material storage, material handling, haul roads, yard areas, and cleared, leveled, unvegetated areas. The App. 4-5 monitoring program includes the following:

- The site supervisor will periodically observe the dust at the permit boundary to determine the level of control needed.
- Level 1, 0 – 5% opacity at the permit boundary triggers increased watering frequency and an application of magnesium chloride on the Out of Pit haulroads.
- Level 2, 5 – 10% opacity will result in even more water and/or magnesium chloride applications
- Level 3, Greater than 10% at the permit boundary triggers increased watering frequency and an application of magnesium chloride on the Out of Pit haulroads.
- Production will stop if dust can not be reduced to 5 – 10% opacity.
- Records of watering will be provided in the Annual report.

The monitoring program specifies that EPA Method 9 will be used along the permit boundary to determine opacity from fugitive dust, non-point sources such as spoil piles, open disturbed areas, pits, etc. Jon Black of Utah DAQ, indicated that EPA Method 9 was occasionally used for fugitive dust control, although it is more frequently used for point source evaluations. Chris McCourt agrees with the difficulty of using method 9 for fugitive dust monitoring and said that he and his consultant struggled with this issue (personal communication 10/7/2009).

Findings:

The information provided in the application may meet the requirements of the Air Quality rules for **R645-301-423.200,** however, the Division does not provide training for permitting staff or inspectors in the application of EPA Method 9. Consequently it is recommended that the Division request that the Utah DAQ evaluate this fugitive dust control

plan prior to issuance of the air quality permit, under the auspices of the MOU to cooperate for the purposes of permitting, signed on September 1, 1999.

TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-230.

Analysis:

Topsoil Removal and Storage

Mine pits and mining sequence are described in Section 523. Overburden removal is shown on Dwg 5-16. Operational sequence and contemporaneous reclamation sequence is shown on Dwg 5-17 through 5-19.

The topsoil salvage operation is described in Section 231.100 through Section 233.100-400 and in Section Four of Appendix 2-1. Table 4-2 of Section Four in Appendix 2-1 provides the average topsoil salvage depth and the subsoil salvage depth by map unit. The topsoil salvage depth ranges from 5 to 10 inches. Subsoil suitability varies due to high pH, clay content, and carbonate accumulations. The suitable subsoil salvage depth ranges from 1 to 55 inches. Appendix 2-1, Table 4-1 outlines the soil suitability criteria to be used to determine soil suitability. Due to this wide variation in suitability of subsoil the application states that topsoil and subsoil salvage will be monitored as described in Section 232.500 and Section 231.100 and Appendix 2-1, p. 4-2 under the direction of a certified soil professional.

Dwg. 2-2 indicates salvage and stockpiling from less than half of the permit area, with the rest of the topsoil being live-hauled to contemporaneous reclamation sites. Table 4-5 provides the expected topsoil and subsoil recovery by year and acreage disturbed. Tables 4-3.1, 4-3.2, 4-3.3 provide similar information by map unit and acreage. Table 4-4 provides topsoil and subsoil salvage for facilities construction. According to plan (Section 232.500), topsoil and subsoil from year-one facilities construction areas will be stockpiled as shown on Drawing 2-2.

Three topsoil stockpiles and a subsoil pile will be located as shown on Drawing 2-2. Dwg. 2-2 describes the average depth and footprint area for each stockpile. From the information on Dwg 2-2, the combined volume of soil stored in stockpiles is 302,000 cu yds, of which 188,000 cu yds is topsoil. Stockpiled soil will be placed such that side slopes will not exceed 3h:1v and the piles will be bermed. The piles will be seeded with an interim mix of grasses described in Section 234.230. All totaled, the stockpiled soil will cover 17.5 acres.

Stockpiles in place for less than one year will be treated with tackifier to control fugitive dust. A temporary cover crop would be preferable, but is not required by the Utah Coal Rules. Stockpiles in place for more than one year will be surface mulched and seeded (Section 231.100). The Applicant states in Section 234.230 that other measures approved by UDOGM may be implemented to provide stockpiles protection from wind and water erosion. In Section 244.100, the Applicant states that stockpiles will be roughened by pocking, gouging or ripping to control erosion.

Findings:

The information provided in the application meets the requirements of the R645 Coal Rules for Soils Handling Operation Plan.

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

Analysis:

General

Acid- and Toxic-Forming Materials and Underground Development Waste

Only the alluvial surface 30 feet of overburden is being considered for surface placement, according to Section 232.720. Section 728.332 describes the expected selenium hazard. In addition Section 728.332 states that Wyoming has a standard of 0.3 mg/kg selenium as suitable and between 0.3 and 0.8 mg/kg selenium as marginally suitable for topsoil and topsoil substitute. This statement fails to recognize that these concentrations are for upland areas (not agricultural areas) and that post-reclamation monitoring of selenium concentrations are required for such levels of selenium (http://deq.state.wy.us/lqd/guidelns/guide1.pdf).

Selenium is associated with sulfide minerals found in sedimentary deposits dominated by shales. Overburden rich in selenium may contaminate surface or groundwater. Selenium rich surface soils may result in toxicity to grazing animals. The Division's Guidelines for Topsoil and Overburden lists the unacceptable levels of selenium in the rooting zone or in ephemeral drainages as greater than or equal to 0.15 mg/kg selenium and as 0.10 mg/kg for the top four feet of fill in surface water impoundments and in intermittent/perennial drainages including 100 year flood plains. The guidelines further state that if soluble selenium exceeds theses values then

placement, assessment, and monitoring will follow the "Joint Selenium Task Force Statement of Best Available Technology, June 1994," which is Attachment 1 of the Guidelines.

Section C Appendix 2-1 and Appendix 6-2 of the application provide surface soil selenium analysis (within the thirty feet of the surface) for soil surface pedons and for the alluvium in six core holes CH-01-05, CH-03-05, CH-05-05, CH-06-05, CH-07 and CH-08. All samples within the surface thirty feet were at or below 0.05 mg/kg water extractable selenium. Since only the upper 30 feet of overburden will be used to construct the reclaimed surface four feet following mining, no selenium impacts to agriculture or to grazing animals are anticipated within the permit area.

Appendix 6-2 also includes results of the analysis of overburden below 30 feet from the same six core holes. The location of the boreholes are shown on the location map at the beginning of Appendix 6-2. The shale overburden had selenium levels less than 0.1 mg/kg using method SW6020 for water soluble selenium. One third of the samples representing the waste rock just above the base coal had elevated selenium content, but were not over the recommended limits described above. Two thirds of the samples taken below the coal seam had unacceptable values of selenium, as reported in mg/kg as follows: 0.15, 0.2. Total selenium values reported for the three Smirl coal seam samples were 0.7, 0.7 and not detected. The weathered coal seam sampled in Robinson Creek was reported to have a total selenium value of 2.2 mg/kg.

The zone immediately below the coal will be exposed through mining and may become saturated as a result of mining. The Applicant's hydrologic reclamation monitoring plan should provide information that is sufficient for the Division to make the required findings of R645-301-880.210 for bond release. In accordance with Attachment 1 (p.5) of the DOGM Soil and Overburden Guidelines, "If water selenium levels exceed 5.0 ppb, monitoring, mitigation, and possibly bonding for that mitigation will be required."

Section 731 describes the measures to be taken to protect the surface and ground water from wash water, chemicals, fuels, and oils and from sediment load.

Findings:

The zone immediately below the coal will be exposed through mining and may become saturated as a result of mining. The Applicant's hydrologic reclamation monitoring plan should provide information that is sufficient for the Division to make the required findings of R645-301-880.210 for bond release. In accordance with Attachment 1 (p.5) of the DOGM Soil and Overburden Guidelines, "If water selenium levels exceed 5.0 ppb, monitoring, mitigation, and possibly bonding for that mitigation will be required."

RECLAMATION PLAN

GENERAL REQUIREMENTS

Regulatory Reference: PL 95-87 Sec. 515 and 516; 30 CFR Sec. 784.13, 784.14, 784.15, 784.16, 784.17, 784.18, 784.19, 784.20, 784.21, 784.22, 784.23, 784.24, 784.25, 784.26; R645-301-231, -301-233, -301-322, -301-323, -301-331, -301-333, -301-341, -301-342, -301-411, -301-412, -301-422, -301-512, -301-513, -301-521, -301-522, -301-525, -301-526, -301-527, -301-528, -301-529, -301-531, -301-533, -301-534, -301-536, -301-537, -301-542, -301-623, -301-624, -301-625, -301-626, -301-631, -301-632, -301-731, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-732, -301-733, -301-746, -301-764, -301-830.

Analysis:

The reclamation plan described in Section 542 is contemporaneous with the operation plan described in Section 528. Overburden removal is shown on Dwg 5-16. Operational sequence and contemporaneous reclamation sequence is shown on Dwg 5-17 through 5-19. The reclamation sequence is shown on Dwg. 5-38. Mining pits will be reclaimed within 180 days of coal removal or 1,500 ft. of active coal face. An excess spoil pile will cover 87 acres at final reclamation and rise 100 ft above the original contour. All reclaimed slopes will be 3h:1v. The surface four feet of all reclaimed surfaces will be replaced topsoil and subsoil. The post mining land use is grazing land or pastureland.

Findings:

Specific findings for reclamation are addressed by discipline below.

TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-240.

Analysis:

Redistribution

The Applicant has made several commitments to test topsoil and subsoil materials during removal to ensure that the reclaimed surface provides a suitable rooting medium to a depth of four feet (Section 232.500, App. 2-1 Section 5, pg. 5-3; Section 232.700).

The Applicant has stated that 90% of the subsoil used to construct the four foot cover depth will be of good to fair quality with respect to pH and lime characteristics. The applicant

further states, "No subsoil or overburden with unacceptable characteristics will be placed within 48 inches of the reclamation surface" (Sec. 5 pg. 5-2 App. 2-1). It is understood that the unacceptable characteristics are defined in the DOGM Guidelines for Topsoil and Overburden Handling, as reproduced in Table 4-1, Sec. 4, App. 2-1.

Reclamation slopes will not exceed 3h:1v (Sec. 242.130(c). Prior to topsoil placement, slopes will be leveled (Sec. 242.110) and treated if necessary to reduce slippage of redistributed topsoil and subsoil (Sec. 242.200). Rubber tired equipment will be minimized on regarded slopes (Sec. 242.120). Dozers and scrapers will be used to replace the topsoil and subsoil to a depth of four feet that will be comprised of 6 – 12 inches of topsoil and the remainder subsoil (Sec. 5 App. 2-1 and Sec. 240). Soil replacement thickness will be checked using a GPS system (Sec. 242.110).

After topsoil placement, soils will be sampled for fertility and salinity with 1 sample taken per four acres (Sec. Section 231.300 and 243). Areas observed to be impacted by compaction due to heavy equipment will be ripped, disked, and harrowed prior to seeding. Areas that are not compacted will be roughened slightly with dozer tracks prior to seeding. Soil amendments will be applied over the seedbed surface All seed will be applied by drill seeder. Seeding will occur immediately after disking, harrowing or dozer tracking and mainly in the spring or fall. (Sec. 242.120 (b). Either 1 T/acre straw or ¾ to 1 T/acre wood fiber mulch will be applied to all reclaimed areas after seeding, as described in Section 244.200 and Section 341.230.

Findings:

The information provided in the application meets the requirements of the R645 Coal Rules for Soils Redistribution Plan.

CONTEMPORANEOUS RECLAMATION

Regulatory Reference: 30 CFR Sec. 785.18, 817.100; R645-301-352, -301-553, -302-280, -302-281, -302-282, -302-283, -302-284.

Analysis:

General

Rough backfilling and grading is required for surface mining under R645-301-553. Operational sequence and contemporaneous reclamation sequence is shown on Dwg 5-17 through 5-19. The application describes contemporaneous reclamation of the pits in Section 528.200 and Section 542.

The applicant requests a variance from reclamation in the 60 day period for the 8th pit as described in Section 542. The Division has advised that the Applicant apply for this variance ninety days before completion of coal recovery in Pit 24, see discussion written on this issue under R645-301-553, Backfilling and Grading.

Findings:

The information provided meets the requirements for contemporaneous reclamation. See also discussion under Backfilling and Grading.

STABILIZATION OF SURFACE AREAS

Regulatory Reference: 30 CFR Sec. 817.95; R645-301-244.

Analysis:

Stockpiled topsoil and subsoil will be roughened (Sec. 244.100), bermed and seeded. These stockpiles cover 17.53 acres (Dwg. 2-2). Seeding of spoil piles is planned for piles that exist longer than a year (Sec. 528.310, p. 5-40.)

Areas adjacent to primary roads will be stabilized and vegetated (Sec. 526.400).

Haul roads will be watered or be treated with dust suppressants and a 15 mph speed limit will be imposed (Sec. 526.400 and App. 4-2).

Slopes of the contemporaneous reclaimed acreage will be less than 3h:1v and will be seeded and mulched after topsoil placement. Lands reclaimed to pasture will not be mulched, however (Sec. 244.200). Grass matting may also be used (Sec. 242.130 (c) and a variety of techniques and materials may be used depending on the reclaimed area (Sec. 244.200).

Construction of the overburden/excess spoil stockpile created from mining Pits 1 –8 and as mining progresses from Pits 9 – 15 is described in Sec. 528.200. Staged reclamation is shown on Dwg 5-19. Major steps in the backfilling and grading described in Section 553 appeared to be specific to the mined out areas, however, the Applicant states that Section 553 applies to the spoil pile. Section 553 states that the excess spoil pile will be initially constructed in lifts with outslopes at the angle of repose. Rough grading of these outslopes to the final design (as shown on Drawings 5-35 and 5-36) will follow by not more than 60 days of the completed construction of the pile. Section 532.300 states that topsoil will be applied to graded areas within 90 days.

The application specifies that seeding and mulching of the excess spoil pile will be contemporaneous with the staged approach to building the pile. i.e., First the 2.7 million cubic yards from Pits 1 – 8 will be seeded and mulched immediately after regrading and the additional 2,500 feet extension of the excess spoil pile from Pits 9 – 15 will be reclaimed contemporaneously as well. The regrading of the excess spoil to a 3h:1h slope is described in Sec. 528.310. The reclamation timetable provided in Section 540 indicates that regraded areas will be topsoiled as soon as possible and within 90 days of final grading (pg. 5-58).

Information provided on the timing of seeding is confusing. The seeding schedule is alternately described as immediately following topsoil application (pg. 2-27 and pg 5-57) or as seasonal in nature (p. 5-58) mainly occurring in early spring and late fall (pg. 2-27). In the June 16, 2009 submittal, the applicant stated that seeding will be conducted after topsoil application in the appropriate season, following seedbed treatment for compaction or amendment incorporation. The applicant has met the performance standard described in R645-301-354 requires planting during the first favorable planting time generally accepted locally for the type of plant materials selected. The concern is for soil stabilization if there is a long period of time between topsoil application. To protect regraded topsoil (in the event there is a long duration between regarding and seeding) R645-301-244.200 requires that suitable mulch be applied to regraded areas covered by topsoil. However, the mulching sequence described in Section 341.230 indicates mulch will not be applied until after seeding. Adequate soil stabilization between topsoil application and planting might be obtained by tackifier as described in the fugitive dust control plan. However, if this approach does not achieve the required erosion control, then mulching will be required.

The Division is aware of many instances where topsoil stockpiles and regraded surfaces have crusted over before seeding. However, the applicant has met the performance standard described in R645-301-354 requires planting during the first favorable planting time generally accepted locally for the type of plant materials selected.

The replacement of overburden into the mined out pit will take place within 60 days (Section 553, p. 5-67), although page 5-59 still contains a reference to grading within 180 days which must be corrected to be in compliance with the requirements of R645-301-553. The replacement of topsoil will occur within 90 days of backfilling and grading (p. 5-58).

The timetable for reclamation provided in Section 542 is specific about the mined out area, but not the spoil pile.

Treatment of rills and gullies is described in Section 244.200 and in Section 244.320 (b).

Findings:

The Mining and Reclamation Plan has met the requirements for soil stabilization, as adequate soil stabilization between topsoil application and delayed planting might be obtained by tackifier as described in the fugitive dust control plan. However, if this approach does not achieve the required erosion control, then mulching will be required. Page 5-59 still contains a reference to grading within 180 days which must be corrected to be in compliance with the requirements of R645-301-553.

CESSATION OF OPERATIONS

Regulatory Reference: 30 CFR Sec. 817.131, 817.132; R645-301-515, -301-541.

Analysis:

Information provided in the application Section 515 mimics the Coal Rules and therefore meets the requirements.

Findings:

Information provided in the application Section 515 mimics the Coal Rules and therefore meets the requirements for Emergency and Temporary Cessation Reporting.

RECOMMENDATIONS:

The application is recommended for approval with stipulations as follows:

The information provided in the application may meet the requirements of the Air Quality rules for **R645-301-423.200,** however, the Division does not provide training for permitting staff or inspectors in the application of EPA Method 9. Consequently it is recommended that the Division request that the Utah DAQ evaluate this fugitive dust control plan prior to issuance of the air quality permit, under the auspices of the MOU to cooperate for the purposes of permitting, signed on September 1, 1999.

The Applicant's hydrologic reclamation monitoring plan (Table 7-6A) for surface water should be modified to include the dissolved selenium parameter, such that is sufficient for the Division to make the required findings of R645-301-880.210 for bond release. In accordance with Attachment 1 (p.5) of the DOGM Soil and Overburden Guidelines, "If water selenium levels exceed 5.0 ppb, monitoring, mitigation, and possibly bonding for that mitigation will be required."

The Mining and Reclamation Plan has met the standards for soil stabilization, although page 5-59 still contains a reference to grading within 180 days which must be corrected to be in compliance with the requirements of R645-301-553.

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